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*South Boston Iron Co's*

PATTERN BOOK.



L I S T  
OF  
PATTERNS, ETC.

BELONGING TO THE  
SOUTH BOSTON IRON COMPANY;

CYRUS ALGER AND OTHERS,  
PROPRIETORS.

REVISED AND CORRECTED, WITH ADDITIONS MADE, TO MAY 1, 1851.

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Foundry and Machine Shop — South Boston.  
Office — Head of Central Wharf.

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BOSTON:  
PRINTED BY JOHN WILSON & SON,  
22, SCHOOL STREET.  
1851.

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## SOUTH BOSTON IRON COMPANY.

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THE SOUTH BOSTON IRON COMPANY are prepared to execute orders for CASTINGS of every description, at the shortest notice, and on the most favorable terms.

In addition to the Geer-wheels, &c. which are particularly enumerated in the following pages, they are constantly adding new patterns to the list, and have first-rate pattern-makers in their employ, so that those who are unable to accommodate themselves from such as are already on hand can be suited with new ones, made at short notice, and of such form and dimensions as may be required. They have also a great variety of Gudgeon, Shaft, Pedestal, Box, and other Patterns used in the various kinds of ma-

chinery; and Hanger Patterns from  $8\frac{1}{2}$  to 18 inches, suitable for shafts from  $1\frac{1}{2}$  to  $2\frac{1}{2}$  inches.

They have also a *Machine Shop* attached to the Foundry, where all kinds of Boring and Turning, including Wrought Iron and Blacksmith Work, are executed in the best manner.

#### ROLLING-MILL CASTINGS.

All descriptions of castings for Rolling-mills are furnished to order.

*Chilled Rollers*, of any dimensions desired, are made to order and warranted. From long experience in this branch of business (Mr. Alger having originally invented and patented the present mode of casting them), they feel confident of being able to furnish a first-rate article.

#### COMPOSITION CASTINGS AND BRONZE CANNON.

These will be furnished at short notice, and of the best quality. These Guns intended for Merchantmen or Steamers to give notice of arrival or departure, as well as for defence, if

occasion should require, are of various calibers, usually 4, 6 and 9 pounders. They are attached to carriages, and are furnished with percussion locks.

A constant supply of the following articles, among many others, kept on hand : —

Potash Kettles	Cespoools
Cauldrons, 15 to 75 gallons.	Travellers
Bark Mills	Grind-stone Cranks
Corn Craekers	Friction Rollers for do.
Door Serapers	Hoisting Wheels and Pinions
Hawser Pipes	Lathe Wheels
Chain Deek Pipes	Lathe Poppetts
Stove Deek Pipes	Rests and T's for do.
Tire Benders	Windlass Boxes
Forge Baeks	Truek Wheels
Oven Doors	Furnacees for Heating
Ash Doors	Houses
Boiler Doors	Dumb Bells
Do. Grates	Wing Gudgeons
Grate Bars, 12 to 36 inehes	Saw Mill Cranks
Cylinder Stoves	Fulling Mill do.
Frames and Grates	Rollers for Doors
Basket Grates	

Barrow's celebrated Cooking Ranges, three sizes, constantly on hand.

#### SUGAR MILLS.

*Sugar Mills*, both *horizontal* for *steam power*, and *perpendicular* for *cattle power*, made at short notice, and usually on hand.

## LOAM CASTINGS.

*Large Kettles* from 100 to 1,500 gallons, and of any form required, made at short notice. Also *Curbs* for the same, for the use of *Soap-boilers* and others. *Sugar Pans* and *Oil Kettles* of all sizes. *Cylinders* for *Paper Manufacturers*, *Powder Works* or any other purpose, of any size that may be wanted, from one foot or less to fifteen feet in diameter. An assortment of *Soap Kettles*, &c. usually kept on hand.

*Heavy Loam* and *Dry Sand* Castings, made of gun iron, are warranted to be from 50 to 100 per cent stronger than if made of common foundry iron.

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 ORDERS for *Locomotive Cranks*, *Car Axles*, and all descriptions of *Shafting* of forged iron, executed with despatch.

## SPUR WHEELS.

9

No.	Diameter.	Pitch.	No. Cogs.	Length of Cogs.
	Ft. In.	Inches.		Inches.
215	1 7 $\frac{3}{4}$ $\frac{5}{4}$ $\frac{2}{3}$ $\frac{6}{5}$	$3\frac{1}{2}$ $3\frac{1}{4}$ $3\frac{1}{4}$ $3\frac{1}{4}$ $3\frac{1}{4}$	17 39 63 31 76	5 10 10 10 9
216	2 $3\frac{1}{4}$	$3\frac{1}{4}$	26	$4\frac{3}{8}$
482	1 $7\frac{3}{4}$	$2\frac{1}{4}$	19	9
483	21 $7\frac{1}{2}$	$3\frac{1}{4}$	256	9      16 segmt.
484	10	$3\frac{1}{4}$	117	9
485	2 $10\frac{3}{4}$	$3\frac{1}{4}$	35	9
217	2 $3\frac{1}{4}$	$3\frac{1}{8}$	27	$4\frac{1}{2}$
218	1 $10\frac{3}{8}$	$3\frac{1}{8}$	22	$3\frac{5}{8}$
223	2	$3\frac{1}{8}$	24	$7\frac{1}{2}$
224	$10\frac{1}{2}$	$3\frac{1}{8}$	11	$7\frac{1}{2}$
219	4 $2\frac{1}{4}$	3	53	$5\frac{1}{2}$
220	3 1	3	39	$5\frac{1}{2}$
221	2 $9\frac{1}{4}$	3	35	$5\frac{1}{2}$
222	2 $1\frac{5}{8}$	3	27	$5\frac{1}{2}$

## SPUR WHEELS.

No.	Diameter.	P.tch.	No. Cogs.	Length of Cogs.
	Ft. In.	Inches.		Inches.
193	1 10 $\frac{3}{4}$	3	24	6 $\frac{1}{2}$
442	2 4	3	29	5 $\frac{1}{2}$
1	20	27 $\frac{5}{8}$	220	7      24 segmt.
2	5 11 $\frac{5}{8}$	27 $\frac{7}{8}$	78	7
3	2 11 $\frac{1}{2}$	27 $\frac{7}{8}$	39	7
4	2 4 $\frac{3}{8}$	27 $\frac{7}{8}$	31	7
5	20	27 $\frac{7}{8}$	220	6      24 segmt.
6	4 1 $\frac{3}{4}$	27 $\frac{7}{8}$	54	5      mortice.
0	2	27 $\frac{7}{8}$	26	5
27	24 4 $\frac{1}{2}$	27 $\frac{7}{8}$	323	7      { 11 of 14 cogs.
486	1 6 $\frac{3}{8}$	27 $\frac{7}{8}$	20	{ 13 of 13 do.

## SPUR WHEELS.

11

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
7	6	6 $\frac{3}{4}$	2 $\frac{13}{16}$	88	6 $\frac{2}{3}$	
8	3		2 $\frac{13}{16}$	40	6 $\frac{2}{3}$	
9	2	$\frac{1}{4}$	2 $\frac{13}{16}$	27	6 $\frac{1}{2}$	
10	1	6 $\frac{7}{8}$	2 $\frac{13}{16}$	21	6 $\frac{2}{3}$	
11	1	5 $\frac{3}{16}$	2 $\frac{13}{16}$	19	6 $\frac{2}{3}$	
12	10	8	2 $\frac{13}{16}$	144	6	16 segmt.
13	6	6 $\frac{5}{8}$	2 $\frac{13}{16}$	88	5	mortice.
453	10		2 $\frac{13}{16}$	137	6 $\frac{1}{2}$	{ 5 segmt. 12 cogs. 7 do. 11 do.
15	1	8	2 $\frac{3}{4}$	23	4 $\frac{1}{4}$	
16	9	8	2 $\frac{3}{4}$	132	8	12 segmt.
17	4	7 $\frac{3}{4}$	2 $\frac{3}{4}$	64	8	
18	12		2 $\frac{3}{4}$	165	7 $\frac{1}{2}$	15 segmt.
19	5		2 $\frac{3}{4}$	68	7 $\frac{3}{8}$	
20	4	$\frac{1}{2}$	2 $\frac{3}{4}$	55	7	
21	1	11 $\frac{3}{4}$	2 $\frac{3}{4}$	27	7 $\frac{3}{8}$	
22	1	9 $\frac{1}{4}$	2 $\frac{3}{4}$	24	6	
23	3		2 $\frac{3}{4}$	41	7 $\frac{3}{8}$	

## SPUR WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
24	3	9 $\frac{1}{2}$	2 $\frac{3}{4}$	52	4 $\frac{3}{4}$
25	1	$\frac{1}{2}$	2 $\frac{3}{4}$	14	4 $\frac{3}{4}$
73	1	10	2 $\frac{3}{4}$	25	6
74	19		2 $\frac{3}{4}$	360	8      20 segmt.
75	2		2 $\frac{3}{4}$	27	8
487	1	$\frac{1}{2}$	2 $\frac{3}{4}$	14	8 $\frac{1}{2}$
	4 -		2 $\frac{3}{4}$	5 $\frac{1}{4}$	6 $\frac{1}{4}$
	1 -	5 $\frac{3}{4}$	"	20	7
26	2		2 $\frac{11}{16}$	28	5
71	2		2 $\frac{11}{16}$	28	7
60	2	7 $\frac{3}{8}$	2 $\frac{5}{8}$	38	3 $\frac{1}{2}$
61		10 $\frac{7}{8}$	2 $\frac{5}{8}$	13	3 $\frac{1}{2}$
62	1	9 $\frac{1}{2}$	2 $\frac{5}{8}$	26	3 $\frac{1}{2}$
63	1	8	2 $\frac{5}{8}$	24	5

## SPUR WHEELS.

13

## SPUR WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.			Inches.
59	2	5 $\frac{1}{2}$	2 $\frac{9}{16}$	36	4	
78	1	8 $\frac{1}{2}$	2 $\frac{9}{16}$	25	7	
448	20		2 $\frac{9}{16}$	300	7	20 segmt.
	2 - $\frac{5}{16}$		2 $\frac{7}{16}$	31	4	
	1 - 8 $\frac{1}{2}$		2 $\frac{5}{16}$	25	4	
	1 - 10 $\frac{7}{8}$		2 $\frac{5}{16}$	28	5	
	2 - $\frac{1}{2}$		2 $\frac{7}{16}$	30	4	
	1 - 9 $\frac{1}{4}$		2 $\frac{9}{16}$	26	4	
	10		2 $\frac{9}{16}$	12	6	
30	18	1 $\frac{3}{4}$	2 $\frac{1}{2}$	272	5 $\frac{1}{2}$	16 segmt.
31	2	1 $\frac{1}{4}$	2 $\frac{1}{2}$	30	5 $\frac{1}{2}$	
32	4	4	2 $\frac{1}{2}$	66	4 $\frac{3}{4}$	
33	2	11 $\frac{1}{4}$	2 $\frac{1}{2}$	44	4 $\frac{3}{4}$	
34	18	1	2 $\frac{1}{2}$	272	7	16 segmt.
35	2	10	2 $\frac{1}{2}$	42	7	
36	1	3 $\frac{3}{4}$	2 $\frac{1}{2}$	16	5 $\frac{1}{4}$	
37	16	2	2 $\frac{1}{2}$	242	4 $\frac{1}{8}$	22 segmt.
38	3	5 $\frac{1}{4}$	2 $\frac{1}{2}$	53	5 $\frac{3}{4}$	
39	1	7 $\frac{5}{8}$	2 $\frac{1}{2}$	24	3 $\frac{7}{8}$	

## SPUR WHEELS.

15

No.	Diameter.	Pitch.	No. Cogs.	Length of Cogs.
	Ft. In.	Inches.		Inches.
40	2 2½	2½	33	5½ } pinions for
41	1 4	2½	20	5½ } mortice
42	1 1¾	2½	17	5 } wheels.
43	4 5	2½	66	5 mortice.
44	17 2	2½	256	7¼ 16 segmt.
45	2 10¾	2½	43	7¼
46	15 10½	2½	240	7 16 segmt.
47	2 1¼	2½	30	7
48	11 6	2½	176	5 16 segmt.
49	1 7	2½	24	5
50	21	2½	312	8½ 24 segmt.
51	2 ¾	2½	31	8½
52	4 6½	2½	68	6
395	3 2	2½	48	6½
396	1	2½	15	7
397	11	2½	14	7½
398	1 2¼	2½	18	8
399	10	2½	152	5½ 8 segmt.
400	7	2½	108	6
58	4 11	2½	76	4¾ { 4 segmt. 13 cogs.
				{ 2 do. 12 do.
66	21 7	2½	320	7 16 segmt.
68	18	2½	272	6 16 segmt.
70	9 2	2½	140	5 { 8 segmt. 12 cogs.
				{ 4 do. 11 do.
69	18	2½	272	7 16 segmt.
72	2	2½	30	7
77	1 8	2½	25	7

## SPUR WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.			
79	3	10	2 $\frac{1}{2}$	58	6
488	2	4 $\frac{1}{2}$	2 $\frac{1}{2}$	36	6
489	1	$\frac{1}{4}$	2 $\frac{1}{2}$	15	4
490	1	11 $\frac{1}{4}$	2 $\frac{1}{2}$	29	5 $\frac{1}{2}$
	/-	2 $\frac{1}{2}$	2 $\frac{1}{2}$	18	6 $\frac{1}{2}$
80	3	11	2 $\frac{7}{16}$	60	6 $\frac{3}{8}$
81	18	1 $\frac{1}{2}$	2 $\frac{7}{16}$	280	4      20 segmt.
447	14	6 $\frac{1}{2}$	2 $\frac{7}{16}$	224	5 $\frac{1}{2}$ 16 segmt.

## SPUR WHEELS.

17

No.	Diameter.	Pitch.	No. Cogs.	Length of Cogs.
	Ft. In.	Inches.		Inches.
87	17	7 $\frac{7}{16}$	264	5 $\frac{1}{2}$ 24 segmt.
424	1 8 $1 - 3 \frac{7}{16}$	2 $\frac{7}{16}$ $2 \frac{7}{16}$	26 20	6 $5 - \frac{1}{2}$
90	15	2 $\frac{3}{8}$	240	6 16 segmt.
91	2 11 $\frac{1}{4}$	2 $\frac{3}{8}$	47	6
92	1	2 $\frac{3}{8}$	16	6
93	2 11 $\frac{3}{4}$	2 $\frac{3}{8}$	46	5 $\frac{1}{8}$
94	14	2 $\frac{3}{8}$	224	5 16 segmt.
95	11 6	2 $\frac{3}{8}$	192	4 12 segmt.
96	2 1 $\frac{3}{8}$	2 $\frac{3}{8}$	33	5 $\frac{7}{8}$
97		2 $\frac{3}{8}$		6
98	1 11 $\frac{1}{4}$	2 $\frac{3}{8}$	30	5
99	4 1 $\frac{1}{2}$	2 $\frac{3}{8}$	66	6
100	1 4 $\frac{1}{2}$	2 $\frac{3}{8}$	22	6
101	12 1 $\frac{1}{2}$	2 $\frac{3}{8}$	192	5 $\frac{1}{4}$
102	1 6 $\frac{3}{8}$	2 $\frac{3}{8}$	24	5 $\frac{1}{2}$
103	2	2 $\frac{3}{8}$	32	5 $\frac{1}{2}$
104	15 10 $\frac{1}{2}$	2 $\frac{3}{8}$	156	4 16 segmt.
105	1 4 $\frac{1}{2}$	2 $\frac{3}{8}$	22	4
106	8 1 $\frac{1}{2}$	2 $\frac{3}{8}$	130	5 $\frac{1}{2}$ 10 segmt.
420	1 7 $\frac{1}{2}$	2 $\frac{3}{8}$	26	6
421	24 1 $\frac{1}{2}$	2 $\frac{3}{8}$	384	7 24 segmt.
422	1 4 $\frac{3}{4}$	2 $\frac{3}{8}$	22	7

## SPUR WHEELS.

No.	Diameter.	Pitch.	No. Cogs.	Length of Cogs.
	Ft. In.	Inches.		Inches.
418	5 7 $\frac{1}{4}$	2 $\frac{3}{8}$	86	5 { 6 segmt. 11 cogs. 2 do. 10 do.
419	23 10	2 $\frac{3}{8}$	382	5 $\frac{1}{2}$ { 30 segmt. 12 cogs. 2 do. 11 do.
89	17	2 $\frac{3}{8}$	272	6 $\frac{1}{2}$ 16 segmt.
88	9 9	2 $\frac{3}{8}$	156	5 $\frac{1}{2}$ 12 segmt.
86	20	2 $\frac{3}{8}$	321	5 $\frac{1}{2}$ { 9 segmt. 14 cogs. 15 do. 13 do.
85	13 2	2 $\frac{3}{8}$	216	6 { 16 segmt. 11 cogs. 4 do. 10 do.
84	5 4 $\frac{1}{2}$	2 $\frac{3}{8}$	86	6 { 7 segmt. 11 cogs. 1 do. 9 do.
83	2 $\frac{1}{4}$	2 $\frac{3}{8}$	32	6 $\frac{1}{2}$
430	15	2 $\frac{3}{8}$	262	5 { 6 segmt. 17 cogs. 10 do. 16 do.
429	9 7 $\frac{1}{2}$	2 $\frac{3}{8}$	156	6 12 segmt.
428	1 7 $\frac{1}{2}$	2 $\frac{3}{8}$	26	6
82	1 4 $\frac{3}{4}$	2 $\frac{3}{8}$	22	7
449	24	2 $\frac{3}{8}$	384	7 24 segmt.
501	12 3	2 $\frac{3}{8}$	196	6 $\frac{1}{2}$ { 4 segmt. 17 cogs. 8 do. 16 do.
	2 - 4 $\frac{1}{8}$	2 $\frac{3}{8}$	37	6 $\frac{1}{2}$

## SPUR WHEELS.

19

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
107	11	7	$2\frac{5}{16}$	192	$6\frac{1}{2}$	16 segmt.
108	1	$6\frac{1}{4}$	$2\frac{5}{16}$	25	$6\frac{1}{2}$	
110	16	$1\frac{1}{2}$	$2\frac{5}{16}$	264	5	24 segmt.
111	1	6	$2\frac{5}{16}$	24	5	
112	1		$2\frac{5}{16}$	16	5	
113		$8\frac{7}{8}$	$2\frac{5}{16}$	12	5	
114	11	$10\frac{5}{8}$	$2\frac{5}{16}$	194	5	{ 10 segmt. 16 cogs. 2 do. 17 do.
	16-	$3\frac{3}{4}$	$2\frac{5}{16}$	266	4 $\frac{1}{4}$	{ 10 " 17 " 3 " 6 " 16 "

## SPUR WHEELS.

No.	Diameter.		Pitch. Inches.	No. Cogs.	Length of Cogs.	
	Ft.	In.				
124	1	10 $\frac{3}{4}$	2 $\frac{1}{4}$	32	5 $\frac{1}{2}$	
125	15	10 $\frac{3}{4}$	2 $\frac{1}{4}$	270	5 $\frac{1}{2}$	18 segmt.
126	2	4 $\frac{1}{2}$	2 $\frac{1}{4}$	39	5	
128	13	9	2 $\frac{1}{4}$	228	4 $\frac{1}{2}$	19 segmt.
129	1	8 $\frac{1}{2}$	2 $\frac{1}{4}$	28	5	
130	8	6	2 $\frac{1}{4}$	144	4 $\frac{7}{8}$	12 segmt.
131	3	1	2 $\frac{1}{4}$	53	4	
132	1	11 $\frac{1}{2}$	2 $\frac{1}{4}$	33	4	
133	1	$\frac{3}{8}$	2 $\frac{1}{4}$	17	12	pinions for rolling mills.
134		11 $\frac{1}{2}$	2 $\frac{1}{4}$	16	12	
135	28		2 $\frac{1}{4}$	432	7	24 segmt.
136	17		2 $\frac{1}{4}$	288	7	16 segmt.
137	20		2 $\frac{1}{4}$	336	7	24 segmt.
138	7	10 $\frac{1}{2}$	2 $\frac{1}{4}$	132	5 $\frac{1}{2}$	11 segmt.
139	3	4 $\frac{1}{4}$	2 $\frac{1}{4}$	57	7	
140	2	9	2 $\frac{1}{4}$	47	7	

on hand  
" "

## SPUR WHEELS.

21

No.	Diameter.	Pitch.	No. Cogs.	Length of Cogs.
	Ft. In.	Inches.		Inches.
141	2 11 $\frac{3}{4}$	2 $\frac{1}{4}$	50	5 $\frac{1}{2}$
143	2 5 $\frac{1}{4}$	2 $\frac{1}{4}$	41	7
144	1 9 $\frac{1}{2}$	2 $\frac{1}{4}$	31	7
145	2 1 $\frac{1}{2}$	2 $\frac{1}{4}$	36	7
146	9 $\frac{1}{4}$	2 $\frac{1}{4}$	13	7
147	1 3 $\frac{3}{4}$	2 $\frac{1}{4}$	22	5 $\frac{1}{2}$
149	15	2 $\frac{1}{4}$	256	5 16 segmt.
123	12	2 $\frac{1}{4}$	201	5 $\frac{1}{2}$ { 12 segmt. 14 cogs.
122	16	2 $\frac{1}{4}$	256	5 $\frac{1}{2}$ 16 segmt.
121	10	2 $\frac{1}{4}$	168	5 $\frac{1}{2}$ 8 segmt.
120	2 4	2 $\frac{1}{4}$	38	5
438	1 7 $\frac{1}{2}$	2 $\frac{1}{4}$	27	5
450	19	2 $\frac{1}{4}$	320	7 16 segmt.
451	18 2	2 $\frac{1}{4}$	304	5 $\frac{1}{2}$ 16 segmt.
490	1 11 $\frac{1}{4}$	2 $\frac{1}{4}$	29	5 $\frac{1}{2}$
491	2 1 $\frac{7}{8}$	2 $\frac{1}{4}$	36	7
492	32 1	2 $\frac{1}{4}$	539	7 { 35 segmt. 15 cogs. 1 do. 14 do.
10-	2 $\frac{1}{4}$	168	7 { 8 & 10 teeth 8" 11	
10- 10 $\frac{1}{4}$	2 $\frac{1}{4}$	180	5-185 - 10 teeth	
1- 8 $\frac{1}{4}$	2 $\frac{1}{4}$	28	5	

## SPUR WHEELS.

No.	Diameter.		Pitch. Inches.	No. Cogs.	Length of Cogs.	
	Ft.	In.			Inches.	
142	1	3 $\frac{1}{4}$	2 $\frac{3}{16}$	39	4 $\frac{1}{2}$	mortice.
481	9	4	2 $\frac{3}{16}$	160	5 $\frac{1}{2}$	{ 4 segmt. 14 cogs. 8 do. 13 do.
493	3	8 $\frac{1}{4}$	2 $\frac{3}{16}$	65	4 $\frac{1}{2}$	mortice.

## SPUR WHEELS.

23

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
150	6	10 $\frac{5}{8}$	2 $\frac{1}{8}$	120	4	
151	5	4 $\frac{1}{2}$	2 $\frac{1}{8}$	94	4	
152	3	8 $\frac{1}{2}$	2 $\frac{1}{8}$	65	4	
153	2	7 $\frac{1}{2}$	2 $\frac{1}{8}$	46	4	
154	2	5 $\frac{5}{8}$	2 $\frac{1}{8}$	36	4	
155	2		2 $\frac{1}{8}$	35	4	
156	1	1 $\frac{1}{8}$	2 $\frac{1}{8}$	19	4	
157		11	2 $\frac{1}{8}$	16	3 $\frac{5}{8}$	
158		9	2 $\frac{1}{8}$	13	5	
159	12	10 $\frac{1}{2}$	2 $\frac{1}{8}$	224	3 $\frac{1}{2}$	16 segmt.
160	20		2 $\frac{1}{8}$	352	4	32 segmt.
161	13	8	2 $\frac{1}{8}$	240	4	16 segmt.
162	11	10	2 $\frac{1}{8}$	213	4	16 segmt.
163	10		2 $\frac{1}{8}$	180	4	12 segmt.
164	14		2 $\frac{1}{8}$	252	4	{ 12 segmt. 16 cogs. do. 15 do.
166	11	2	2 $\frac{1}{8}$	192	5 $\frac{1}{4}$	16 segmt.
423	2	9	2 $\frac{1}{8}$	48	5	
167	10		2 $\frac{1}{8}$	180	5	12 segmt.
168	11		2 $\frac{1}{8}$	198	5	18 segmt.
169	2	1	2 $\frac{1}{8}$	37	5	
170	1	5 $\frac{3}{4}$	2 $\frac{1}{8}$	26	5	
171	7	10 $\frac{1}{2}$	2 $\frac{1}{8}$	140	4	10 segmt.
172		11	2 $\frac{1}{8}$	16	4 $\frac{1}{4}$	
173	4	8	2 $\frac{1}{8}$	83	4	{ 3 segmt. 11 cogs. 5 do. 10 do.
174	6		2 $\frac{1}{8}$	105	4	7 segmt. 15 cogs.

## SPUR WHEELS.

No.	Diameter.	Pitch.	No. Cogs.	Length of Cogs.	
				Ft.	In.
182	10 10 $\frac{3}{4}$	2 $\frac{1}{8}$	195	5	{ 3 segmt. 13 cogs. 13 do. 12 do.
183	8 1 $\frac{1}{2}$	2 $\frac{1}{8}$	144	5	8 segmt.
184	5 4	2 $\frac{1}{8}$	94	4	{ 6 segmt. 12 cogs. 2 do. 11 do.
185	15	2 $\frac{1}{8}$	265	4	{ 15 segmt. 17 cogs. 1 do. 16 do.
186	5 11 $\frac{1}{2}$	2 $\frac{1}{8}$	106	4	{ 2 segmt. 14 cogs. 6 do. 13 do.
187	2 5	2 $\frac{1}{8}$	43	5	
115	2 3 $\frac{1}{2}$	2 $\frac{1}{8}$	41	5	
109	2 9	2 $\frac{1}{8}$	48	5	
535	1 6 $\frac{3}{8}$	2 $\frac{1}{8}$	27	4	
431	15 10 $\frac{1}{2}$	2 $\frac{1}{8}$	283	4	{ 11 segmt. 18 cogs. 5 do. 17 do.
494	3	2 $\frac{1}{8}$	54	4	mortice.
	1 2 - 4	2 $\frac{1}{8}$	216	5	{ 8 $\frac{1}{4}$ 8 $\frac{1}{4}$
	1 - 7 $\frac{1}{4}$	2 $\frac{1}{8}$	18	4	
	1 - 7 $\frac{3}{4}$	"	28	4	

## SPUR WHEELS.

25

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.			Inches.	
175	11	10 $\frac{1}{2}$	2	228	4 $\frac{1}{8}$	12 segmt.
176	10	1	2	192	4	12 segmt.
177	7		2	132	4	12 segmt.
178	1	6 $\frac{3}{8}$	2	29	4 $\frac{1}{8}$	
180		11	2	17	7	
181	14	1 $\frac{1}{2}$	2	256	5	16 segmt.
116	3	1 $\frac{1}{4}$	2	59	5 $\frac{1}{2}$	
444	2	2 $\frac{1}{2}$	2	42	5 $\frac{1}{2}$	
443	5		2	96	4 $\frac{1}{2}$	mortice.
445	11		2	208	6	16 segmt.
495	2	$\frac{1}{4}$	2	38	5	
	1 -	$\frac{4}{5}$ -	2	26	5 -	

## SPUR WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.			Inches.
188	7	2	1 $\frac{7}{8}$	144	2 $\frac{3}{4}$	8 segmt.
189		9 $\frac{5}{8}$	1 $\frac{7}{8}$	16	3	

## SPUR WHEELS.

27

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
	4		1 $\frac{1}{4}$		<i>4 mortise rim</i>	
	3		1 $\frac{1}{4}$		4 " "	
195	14		1 $\frac{3}{4}$	304	4	16 segmt.
196	11	6	1 $\frac{3}{4}$	252	3 $\frac{3}{4}$	18 segmt.
197	11	4	1 $\frac{3}{4}$	252	5	12 segmt.
198	9	10	1 $\frac{3}{4}$	216	4	18 segmt.
199	5		1 $\frac{3}{4}$	108	4	6 segmt.
200	4	11 $\frac{5}{8}$	1 $\frac{3}{4}$	108	4 $\frac{3}{4}$	
201	3	4 $\frac{1}{4}$	1 $\frac{3}{4}$	73	4 $\frac{3}{4}$	wt. 370 lb.
202	1	6 $\frac{7}{8}$	1 $\frac{3}{4}$	34	4	
203	1	5 $\frac{5}{8}$	1 $\frac{3}{4}$	32	5 $\frac{1}{4}$	wt. 156 lb.
204	1	1 $\frac{7}{8}$	1 $\frac{3}{4}$	25	4 $\frac{1}{8}$	
205		10	1 $\frac{3}{4}$	18	4 $\frac{3}{4}$	
206	1	7 $\frac{7}{8}$	1 $\frac{3}{4}$	36	3 $\frac{1}{8}$	
207	7	6	1 $\frac{3}{4}$	160	3 $\frac{5}{8}$	10 segmt.
208	8	6	1 $\frac{3}{4}$	204	3 $\frac{1}{2}$	11 segmt.

## SPUR WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.			Inches.	
209	8		1 $\frac{3}{4}$	176	4	16 segmt.
210	1	1 $\frac{1}{2}$	1 $\frac{3}{4}$	24	3 $\frac{5}{8}$	
211	1	1 $\frac{1}{2}$	1 $\frac{3}{4}$	25	4	
212	10	10	1 $\frac{3}{4}$	234	5	18 segmt.
213	6	1	1 $\frac{3}{4}$	132	7	
214	1	2	1 $\frac{3}{4}$	25	7	
194	1	$\frac{1}{4}$	1 $\frac{3}{4}$	22	7	
192		$7\frac{1}{2}$	1 $\frac{3}{4}$	14	7	
191	1	5	1 $\frac{3}{4}$	31	4 $\frac{1}{2}$	
190		$9\frac{1}{2}$	1 $\frac{3}{4}$	17	4	
119		$7\frac{3}{4}$	1 $\frac{3}{4}$	14	4	
118		6	1 $\frac{3}{4}$	11	4	
434	4		1 $\frac{3}{4}$	86	4	
433	1	$\frac{1}{4}$	1 $\frac{3}{4}$	22	4	
432	3	$\frac{1}{4}$	1 $\frac{3}{4}$	65	4	
427	2	$\frac{1}{4}$	1 $\frac{3}{4}$	43	4	
426	2	$5\frac{1}{4}$	1 $\frac{3}{4}$	53	4 $\frac{3}{4}$	
441	9	5	1 $\frac{3}{4}$	204	3 $\frac{1}{2}$	12 segmt.
496	1	$8\frac{3}{8}$	1 $\frac{3}{4}$	36	3 $\frac{1}{4}$	
504		$11\frac{7}{8}$	1 $\frac{3}{4}$	21	4	
505		$11\frac{1}{2}$	1 $\frac{3}{4}$	21	4	
	12 -	$1\frac{1}{2}$	$1\frac{3}{4}$	264	4	
	1 -	$8\frac{7}{8}$	$1\frac{3}{4}$	37	4	
	3 -	$6\frac{1}{2}$	$1\frac{3}{4}$	76	4 $\frac{3}{4}$	
		$8\frac{7}{8}$	$1\frac{3}{4}$	16	4 $\frac{5}{8}$	
	1 -	8	$1\frac{3}{4}$	36	4 $\frac{1}{8}$	

## SPUR WHEELS.

29

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
225	7	6	1 $\frac{5}{8}$	174	5
226	1		1 $\frac{5}{8}$	23	5
227	1	1	1 $\frac{5}{8}$	25	5
			-	-	-

## SPUR WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
440	2		$1\frac{9}{16}$	48	3
439	6	11	$1\frac{9}{16}$	128	3      12 segmt.

## SPUR WHEELS.

31

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
232	12	1½	1½	288	3	18 segmt.
233	11		1½	272	3½	16 segmt.
234	5	10	1½	144	3	12 segmt.
235	10	2½	1½	256	3	16 segmt.
236	3	7	1½	89	3	
237	2	6	1½	62	3	
238	2	2½	1½	54	3	
239	1	6	1½	37	3	
240		8½	1½	18	3½	
241		8¼	1½	17	3	
242		7¾	1½	15	3	
243	7		1½	180	2¾	12 segmt.
244		6½	1½	13	2¾	
245		5¾	1½	12	3½	
246	1	3	1½	31	3	
247	6		1½	144	4½	
248	5		1½	128	4½	
249	8	4½	1½	216	4	12 segmt.
250	10		1½	152	3½	12 segmt.
251	7	4	1½	192	3¾	12 segmt.
252	5	10	1½	140	3½	{ 7 segmt. 18 cogs. 1 do. 14 do.
253	3		1½	75	4½	
254	1	8	1½	42	4½	
255	1	6	1½	38	4½	
401		9	1½	20	4½	

## SPUR WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.			Inches.	
402	1		1½	25	4½	
403		7½	1½	15	4½	
404	2		1½	50	3¼	
405	4	4½	1½	110	3¼	
406	3		1½	75	3¼	
407	1	2¾	1½	30	3¼	
408	1		1½	25	3¼	
409		8½	1½	18	3¼	
410		5¾	1½	12	3¼	
257	25	9	1½	646	3¼	38 segmt.
258	16	½	1½	408	3	24 segmt.
259	1	11	1½	48	3¼	
284	4	6¾	1½	115	3¼	
117	5	2¾	1½	130	3	
425	10	1	1½	240	3	16 segmt.
424	9	5	1½	228	3	12 segmt.
497		10½	1½	21	3¼	
505	1	8	1½	42	3	
	2-10¾		1½	72	3½	
	3-	6	1½	87	3¾	
	5½		1½	11	3¼	

## SPUR WHEELS.

33

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
256	4	$1\frac{1}{4}$	$1\frac{3}{8}$	96	$3\frac{1}{4}$ mortice.

## SPUR WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.			
286	2	4 $\frac{5}{8}$	1 $\frac{1}{4}$	71	2 $\frac{3}{4}$
287	1	7	1 $\frac{1}{4}$	48	2 $\frac{3}{4}$
288	1	2 $\frac{3}{8}$	1 $\frac{1}{4}$	36	2 $\frac{3}{4}$
289	1	1 $\frac{1}{2}$	1 $\frac{1}{4}$	34	2 $\frac{3}{4}$
290	1	5 $\frac{5}{8}$	1 $\frac{1}{4}$	32	2 $\frac{3}{4}$
291	1		1 $\frac{1}{4}$	30	2 $\frac{3}{4}$
292		10 $\frac{3}{4}$	1 $\frac{1}{4}$	28	2 $\frac{3}{4}$
293		10 $\frac{3}{8}$	1 $\frac{1}{4}$	26	2 $\frac{3}{4}$
294		9 $\frac{3}{8}$	1 $\frac{1}{4}$	24	2 $\frac{3}{4}$
295		8 $\frac{3}{4}$	1 $\frac{1}{4}$	22	2 $\frac{3}{4}$
296		7 $\frac{1}{8}$	1 $\frac{1}{4}$	18	2 $\frac{3}{4}$
297		6 $\frac{1}{4}$	1 $\frac{1}{4}$	16	2 $\frac{5}{8}$
298		4 $\frac{3}{4}$	1 $\frac{1}{4}$	12	2 $\frac{3}{4}$
299		4 $\frac{1}{2}$	1 $\frac{1}{4}$	11	2 $\frac{7}{8}$
300	1	2 $\frac{1}{2}$	1 $\frac{1}{4}$	38	1 $\frac{5}{8}$
301		7 $\frac{1}{2}$	1 $\frac{1}{4}$	19	1 $\frac{5}{8}$
302	2	6	1 $\frac{1}{4}$	75	3 $\frac{3}{4}$
285	1	5 $\frac{1}{2}$	1 $\frac{1}{4}$	44	3 $\frac{3}{4}$
	1 -	1 $\frac{5}{4}$	1 $\frac{1}{4}$	33	3 $\frac{3}{2}$

## SPUR WHEELS.

35

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		
282	2	$\frac{1}{2}$	$1\frac{3}{16}$	65	$2\frac{1}{4}$
283		$4\frac{1}{8}$	$1\frac{3}{16}$	11	$2\frac{1}{2}$
<del>498</del>	<del>1</del>	<del>10</del>	<del>1<math>\frac{1}{16}</math></del>	<del>58</del>	<del>2</del>
499	1	$3\frac{5}{8}$	$1\frac{3}{16}$	42	3
				16	$2\frac{1}{4}$
498	1	10	$1\frac{1}{8}$	58	3
262	3	$7\frac{3}{4}$	$1\frac{1}{8}$	116	3
263	3	$\frac{1}{8}$	$1\frac{1}{8}$	96	3
264	2	$\frac{1}{2}$	$1\frac{1}{8}$	65	3

*Mistake*

## SPUR WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.			
265	1	8	1 $\frac{1}{8}$	53	3
266	1	6	1 $\frac{1}{8}$	48	3
267	1	2	1 $\frac{1}{8}$	37	3
268		10 $\frac{1}{4}$	1 $\frac{1}{8}$	27	3
269		9	1 $\frac{1}{8}$	24	3
270		6 $\frac{1}{8}$	1 $\frac{1}{8}$	16	3
271		4 $\frac{1}{8}$	1 $\frac{1}{8}$	10	2 $\frac{3}{4}$
272	19	6	1 $\frac{1}{8}$	630	3      30 segmt.
273	1	4	1 $\frac{1}{8}$	43	3
274	1		1 $\frac{1}{8}$	32	2 $\frac{1}{4}$
275		7 $\frac{7}{8}$	1 $\frac{1}{8}$	21	2 $\frac{1}{4}$
276		4 $\frac{1}{4}$	1 $\frac{1}{8}$	11	3
277	2	3 $\frac{3}{4}$	1 $\frac{1}{8}$	78	2 $\frac{5}{8}$
278		5 $\frac{5}{8}$	1 $\frac{1}{8}$	16	2 $\frac{5}{8}$
279		9 $\frac{1}{4}$	1 $\frac{1}{8}$	27	2 $\frac{3}{4}$
280		8	1 $\frac{1}{8}$	21	3
281		7	1 $\frac{1}{8}$	18	3
228	3	4	1 $\frac{1}{8}$	106	3
229	2	6	1 $\frac{1}{8}$	80	3
230		11 $\frac{3}{4}$	1 $\frac{1}{8}$	31	3
231		8	1 $\frac{1}{8}$	22	2 $\frac{1}{2}$
260	1	2 $\frac{1}{2}$	1 $\frac{1}{8}$	39	2 $\frac{1}{4}$
261	1	9 $\frac{1}{2}$	1 $\frac{1}{8}$	60	2 $\frac{1}{2}$

## SPUR WHEELS.

37

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
304	1	6	$1\frac{1}{16}$	54	2
305	1		$1\frac{1}{16}$	36	2
306	2		$1\frac{1}{16}$	72	2
307	1	2	$1\frac{1}{16}$	41	2
308		6	$1\frac{1}{16}$	18	2

## SPUR WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.			Inches.	
309		8	1 $\frac{1}{16}$	24	2	
409 $\frac{1}{2}$		5	1 $\frac{1}{16}$	15	2	
410 $\frac{1}{2}$		4 $\frac{7}{8}$	1 $\frac{1}{16}$	14	2 $\frac{7}{8}$	
303	1	8 $\frac{3}{4}$	1 $\frac{1}{16}$	59	2 $\frac{1}{2}$	
336	1	8	1 $\frac{1}{16}$	58	2	
	2 $\frac{1}{2}$	1 $\frac{2}{4}$	1 $\frac{1}{16}$	75	2	
310	4	6	1	168	4 $\frac{1}{2}$	6 segmt.
311	4	5	1	162	3 $\frac{1}{2}$	6 segmt.
312	4		1	150	2 $\frac{1}{4}$	6 segmt.
313		8	1	25	4 $\frac{1}{2}$	
314		8 $\frac{1}{4}$	1	25	3 $\frac{1}{2}$	

## SPUR WHEELS.

39

No.	Diameter.		Pitch. Inches.	No. Cogs.	Length of Cogs. Inches.
	Ft.	In.			
315		4	1	12	3 $\frac{3}{4}$
316	2	4 $\frac{3}{8}$	1	90	3
317		9 $\frac{3}{4}$	1	31	3
318		9 $\frac{3}{8}$	1	30	3
319		6 $\frac{7}{8}$	1	22	3
320		4 $\frac{3}{4}$	1	15	3
321		3 $\frac{3}{8}$	1	11	3
322	1	4	1	50	2 $\frac{1}{4}$
323		8	1	25	2 $\frac{1}{4}$
324		6 $\frac{1}{4}$	1	19	2 $\frac{1}{4}$
325		4 $\frac{1}{4}$	1	13	2 $\frac{1}{4}$
326	1	4 $\frac{1}{8}$	1	52	1 $\frac{1}{4}$
327		7	1	23	1 $\frac{1}{4}$
328	2	7 $\frac{5}{8}$	1	101	2 $\frac{1}{4}$
329	2	3 $\frac{3}{4}$	1	79	2 $\frac{1}{4}$
330		7 $\frac{3}{4}$	1	25	2 $\frac{1}{4}$
331		6 $\frac{1}{8}$	1	20	2 $\frac{3}{8}$
332		5	1	16	2 $\frac{1}{4}$
411		4 $\frac{1}{8}$	1	13	2 $\frac{1}{4}$
412		3 $\frac{3}{16}$	1	10	2 $\frac{1}{4}$
335	2	9 $\frac{3}{4}$	1	103	2
	3	3	/	/ 2 2	2

## SPUR WHEELS.

No.	Diameter.		Pitch. Inches.	No. Cogs.	Length of Cogs. Inches.
	Ft.	In.			
390	2		$\frac{7}{8}$	87	2
382		10	$\frac{7}{8}$	35	2
381		$4\frac{1}{2}$	$\frac{7}{8}$	16	2
353		4	$\frac{7}{8}$	15	2
500	1		$\frac{7}{8}$	36	2

## SPUR WHEELS.

41

No.	Diameter.		Pitch. Inches.	No. Cogs.	Length of Cogs. Inches.
	Ft.	In.			
333	1	2 $\frac{3}{8}$	1 $\frac{3}{16}$	56	1 $\frac{3}{16}$
334		4 $\frac{3}{8}$	1 $\frac{3}{16}$	17	1 $\frac{3}{16}$
340	2	1 $\frac{1}{4}$	$\frac{3}{4}$	100	3
341	1	1 $\frac{1}{8}$	$\frac{3}{4}$	50	3
342		7 $\frac{1}{8}$	$\frac{3}{4}$	33	3
343		6 $\frac{5}{8}$	$\frac{3}{4}$	27	3
344		3 $\frac{7}{8}$	$\frac{3}{4}$	16	3
345	3	5 $\frac{3}{8}$	$\frac{3}{4}$	169	2
346		10 $\frac{1}{8}$	$\frac{3}{4}$	41	2

## SPUR WHEELS.

No.	Diameter.		Pitch. Inches.	No. Cogs.	Length of Cogs. Inches.
	Ft.	In.			
347		7 $\frac{1}{8}$	$\frac{3}{4}$	29	2
348		6 $\frac{3}{8}$	$\frac{3}{4}$	26	2
349		3 $\frac{1}{2}$	$\frac{3}{4}$	14	2
350	2	5 $\frac{3}{8}$	$\frac{3}{4}$	120	1 $\frac{1}{2}$
351	1	9 $\frac{1}{4}$	$\frac{3}{4}$	87	1 $\frac{1}{2}$
352	1	2 $\frac{5}{8}$	$\frac{3}{4}$	60	1 $\frac{1}{2}$
354	1	3 $\frac{3}{8}$	$\frac{3}{4}$	50	1 $\frac{1}{2}$
355		10 $\frac{1}{2}$	$\frac{3}{4}$	43	1 $\frac{1}{2}$
356		9 $\frac{3}{4}$	$\frac{3}{4}$	40	1 $\frac{1}{2}$
357		8 $\frac{3}{4}$	$\frac{3}{4}$	36	1 $\frac{1}{2}$
358		7 $\frac{7}{8}$	$\frac{3}{4}$	32	1 $\frac{1}{2}$
359		5 $\frac{7}{8}$	$\frac{3}{4}$	25	1 $\frac{1}{2}$
360		5 $\frac{3}{8}$	$\frac{3}{4}$	22	1 $\frac{1}{2}$
361		4 $\frac{5}{8}$	$\frac{3}{4}$	19	1 $\frac{1}{2}$
362		3 $\frac{5}{8}$	$\frac{3}{4}$	15	1 $\frac{1}{2}$
363		3	$\frac{3}{4}$	12	1 $\frac{1}{2}$
364		2 $\frac{1}{4}$	$\frac{3}{4}$	9	1 $\frac{1}{2}$
365	2	1 $\frac{1}{4}$	$\frac{3}{4}$	98	1 $\frac{1}{2}$
366		11 $\frac{7}{8}$	$\frac{3}{4}$	48	7 $\frac{7}{8}$
367		3 $\frac{1}{2}$	$\frac{3}{4}$	14	7 $\frac{7}{8}$
368		11	$\frac{3}{4}$	48	1 $\frac{1}{2}$
369		2 $\frac{7}{8}$	$\frac{3}{4}$	12	1 $\frac{3}{4}$
370		8 $\frac{3}{4}$	$\frac{3}{4}$	36	1 $\frac{1}{4}$
371		5	$\frac{3}{4}$	20	1 $\frac{3}{8}$
372		3 $\frac{1}{2}$	$\frac{3}{4}$	14	1 $\frac{3}{8}$
413		2 $\frac{7}{8}$	$\frac{3}{4}$	12	1 $\frac{1}{2}$

## SPUR WHEELS.

43

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		
339	1	6	$\frac{3}{4}$	74	$1\frac{1}{2}$
502	2	2	$\frac{3}{4}$	109	3
503		$4\frac{5}{8}$	$\frac{3}{4}$	19	3
373	1	$2\frac{1}{2}$	$\frac{11}{16}$	64	1
374		3	$\frac{11}{16}$	13	1
375	1	$5\frac{1}{2}$	$\frac{5}{8}$	88	2
376	1	3	$\frac{5}{8}$	75	2
377		5	$\frac{5}{8}$	25	2

## SPUR WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs. Inches.
	Ft.	In.	Inches.		
378		2 $\frac{3}{8}$	$\frac{5}{8}$	12	2
379	1	1 $\frac{1}{2}$	$\frac{5}{8}$	60	$\frac{7}{8}$
380		3 $\frac{1}{8}$	$\frac{5}{8}$	15	$\frac{7}{8}$
383	1	2 $\frac{5}{8}$	$\frac{9}{16}$	80	$1\frac{1}{4}$
384		2 $\frac{1}{16}$	$\frac{9}{16}$	11	$1\frac{1}{4}$
385	1	4 $\frac{3}{4}$	$\frac{9}{16}$	96	$1\frac{1}{4}$
386		4 $\frac{1}{8}$	$\frac{9}{16}$	24	$1\frac{1}{2}$
414		4	$\frac{9}{16}$	24	$1\frac{1}{2}$
415		3 $\frac{1}{8}$	$\frac{9}{16}$	23	$1\frac{1}{8}$
416		2 $\frac{1}{4}$	$\frac{9}{16}$	13	$1\frac{3}{4}$
417		2 $\frac{1}{8}$	$\frac{9}{16}$	12	$1\frac{1}{2}$

## SPUR WHEELS.

45

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs. Inches.
	Ft.	In.	Inches.		
387		9 $\frac{7}{8}$	$\frac{1}{2}$	64	$1\frac{3}{8}$
388		6 $\frac{3}{4}$	$\frac{1}{2}$	44	$1\frac{3}{8}$
389		3	$\frac{1}{2}$	19	$1\frac{5}{6}$
391		11 $\frac{7}{8}$	$\frac{3}{8}$	96	$1\frac{1}{8}$
392		6	$\frac{3}{8}$	48	1
393		4 $\frac{1}{4}$	$\frac{3}{8}$	34	$1\frac{1}{4}$
394	1	3 $\frac{1}{2}$	$\frac{3}{8}$	126	$1\frac{1}{8}$
14		9 $\frac{3}{4}$	$\frac{5}{16}$	90	$1\frac{1}{16}$

## SPUR WHEELS.

No.	Diameter.		Pitch. Inches.	No. Cogs.	Length of Cogs. Inches.
	Ft.	In.			

## BEVEL WHEELS.

47

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
1	1	5 $\frac{1}{4}$	3	18	4 $\frac{1}{2}$ { To run with wooden wheel of 54 cogs.
174	2		3	25	6 $\frac{3}{8}$
173	9	7	3	120	6 $\frac{3}{8}$ 12 segmt.
189	7	8	3	96	5 $\frac{5}{8}$ }
190	2		3	25	5 $\frac{5}{8}$ }
	4 - 2 $\frac{1}{4}$		3	52	8 }
	3 - 6 $\frac{1}{2}$		3	44	8 }
203	5	1 $\frac{1}{4}$	2 $\frac{7}{8}$	66	6 }
204	2	1 $\frac{1}{4}$	2 $\frac{7}{8}$	26	6 }
23	2	8	2 $\frac{3}{4}$	36	6 }
24	3		2 $\frac{3}{4}$	41	6 }
2	3		2 $\frac{3}{4}$	41	6 mortice.

## BEVEL WHEELS.

No.	Diameter.		Pitch. Inches.	No. Cogs.	Length of Cogs.	
	Ft.	In.				
183	2	10	2 <sup>11</sup> / <sub>6</sub>	40	6	
182	6	8 <sup>1</sup> / <sub>2</sub>	2 <sup>11</sup> / <sub>6</sub>	96	6	12 segmt.
176	3	1	2 <sup>5</sup> / <sub>8</sub>	44	8	}
175	5	5/8	2 <sup>5</sup> / <sub>8</sub>	73	8	

## BEVEL WHEELS.

49

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
3	3	1 $\frac{1}{4}$	2 $\frac{5}{8}$	45	6 $\frac{1}{4}$
4	13	2	2 $\frac{5}{8}$	192	6 $\frac{1}{4}$
145	12		2 $\frac{5}{8}$	176	7 $\frac{5}{8}$
146	3	3 $\frac{3}{8}$	2 $\frac{5}{8}$	45	7 $\frac{5}{8}$
147	8	10	2 $\frac{5}{8}$	128	7
148	2	11	2 $\frac{5}{8}$	42	7
201	3	8 $\frac{1}{2}$	2 $\frac{5}{8}$	53	7
202	2	5 $\frac{1}{4}$	2 $\frac{5}{8}$	35	7
	8-10		2 $\frac{5}{8}$	128	7- 8 Segts g 16 width

## BEVEL WHEELS.

No.	Diameter.		Pitch.	No. Cogs	Length of Cogs.
	Ft.	In.	Inches.		Inches.
25	2		$2\frac{9}{16}$	29	7
26	5	2	$2\frac{9}{16}$	75	7
32	2	7	$2\frac{9}{16}$	37	7
33	5	2	$2\frac{9}{16}$	75	7
185	3	$6\frac{1}{2}$	$2\frac{9}{16}$	52	$7\frac{1}{2}$
184	11	$4\frac{1}{2}$	$2\frac{9}{16}$	170	$7\frac{1}{2}$ } 16 segmt.
5	1	8	$2\frac{1}{2}$	25	$6\frac{1}{2}$ }
6	9	11	$2\frac{1}{2}$	150	$6\frac{1}{2}$ } { 6 segmt. 13 cogs. 6 do. 12 do.

## BEVEL WHEELS.

51

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
7	4	4 $\frac{1}{2}$	2 $\frac{1}{2}$	66	5 $\frac{1}{2}$
8	1	4	2 $\frac{1}{2}$	20	5 $\frac{1}{2}$
9	1	4 $\frac{1}{2}$	2 $\frac{1}{2}$	20	6 $\frac{1}{2}$
150	4	6	2 $\frac{1}{2}$	68	5
151	2	3	2 $\frac{1}{2}$	34	5
152	2	6	2 $\frac{1}{2}$	38	5
153	1	6 $\frac{1}{2}$	2 $\frac{1}{2}$	23	5
101	3	7	2 $\frac{1}{2}$	53	6
102	2	4	2 $\frac{1}{2}$	35	6
50	2	4 $\frac{1}{2}$	2 $\frac{1}{2}$	36	6
51	12	8 $\frac{1}{2}$	2 $\frac{1}{2}$	192	6
					16 segmt.

## BEVEL WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.			Inches.	
11	3	9 $\frac{1}{2}$	2 $\frac{3}{5}$	60	6	{
12	2	1 $\frac{1}{4}$	2 $\frac{3}{5}$	32	6	{
13	3	6 $\frac{5}{8}$	2 $\frac{3}{5}$	56	7	{
14	9	2	2 $\frac{3}{5}$	154	7	{ 16 segmt.
15	3	5 $\frac{1}{2}$	2 $\frac{3}{5}$	53	5 $\frac{1}{2}$	{
16	11	3	2 $\frac{3}{8}$	176	5 $\frac{1}{2}$	{ 16 segmt.
17	3	3 $\frac{1}{2}$	2 $\frac{3}{8}$	51	7 $\frac{1}{4}$	{
18	10	3	2 $\frac{3}{8}$	160	7 $\frac{1}{4}$	{ 16 segmt.
19	2	4 $\frac{3}{4}$	2 $\frac{3}{8}$	37	5 $\frac{1}{2}$	{
20	10		2 $\frac{3}{5}$	156	5 $\frac{1}{2}$	{ 12 segmt.
21	3	1 $\frac{1}{2}$	2 $\frac{3}{5}$	48	3	{
22		10	2 $\frac{3}{8}$	13	3	} mortice.

## BEVEL WHEELS.

53

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
30	2	11 $\frac{1}{2}$	2 $\frac{5}{16}$	32	6 }
31	8		2 $\frac{5}{16}$	132	6 } 12 segmt.
36	3	1 $\frac{1}{4}$	2 $\frac{1}{4}$	52	5 }
37	2	1	2 $\frac{1}{4}$	35	5 }
38	15	7	2 $\frac{1}{4}$	156	5 } 16 segmt.
39	2	4	2 $\frac{1}{4}$	38	5 }

## BEVEL WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.			Inches.	
35	4	3 $\frac{1}{2}$	2 $\frac{1}{4}$	72	7	{ mortice.
34	1	9 $\frac{1}{2}$	2 $\frac{1}{4}$	30	7	
	2 -	6	2 $\frac{1}{2}$	42	4 $\frac{3}{4}$	
	2 -	1	2 $\frac{1}{4}$	34	4 $\frac{3}{4}$	
40	2	$\frac{1}{8}$	2 $\frac{1}{8}$	36	4	{
41	10		2 $\frac{1}{8}$	180	4	12 segmt.

## BEVEL WHEELS.

55

No.	Diameter.		Pitch. Inches.	No. Cogs.	Length of Cogs.	
	Ft.	In.				
46	1	6 $\frac{1}{8}$	2 $\frac{1}{16}$	27	4	{
47	9	1	2 $\frac{1}{16}$	168	4	{ 12 segmt.
48	4	1	2 $\frac{1}{16}$	72	4 $\frac{1}{2}$	{
49	2	3 $\frac{3}{4}$	2 $\frac{1}{16}$	37	4 $\frac{1}{2}$	}
178	1	3 $\frac{3}{4}$	2	24	4 $\frac{1}{2}$	{
177	3	10 $\frac{1}{2}$	2	72	4 $\frac{1}{2}$	{ 6 segmt.
54	4	3 $\frac{3}{8}$	2	76	5	{
55	2	1 $\frac{1}{4}$	2	38	5	{
56	3	4 $\frac{3}{4}$	2	64	5	{
57	2	6	2	47	5	{
58	4	10	2	91	6	{ mortice.
59	1	7 $\frac{1}{2}$	2	30	6	{
60	8	3	2	156	5	{ 12 segmt.
61	1	7 $\frac{1}{4}$	2	30	5	{
53	3	1 $\frac{1}{4}$	2	56	5	{
52	1	1	2	20	5	{

## BEVEL WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.			Inches.	
70	1	8	2	32	6	
71	2	6	2	48	6	} mortice.
42	1	7 $\frac{3}{4}$	2	31	5 $\frac{1}{2}$	
43	4	2	2	76	5 $\frac{1}{2}$	} mortice.
191	3	<del>2</del> $\frac{3}{8}$	2	57	6	
192	2	8	2	50	6	
197	4	8 $\frac{7}{8}$	2	88	7	} mortice.
198	2	5 $\frac{1}{8}$	2	45	7	

## BEVEL WHEELS.

57

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
54 $\frac{1}{2}$	3	3 $\frac{3}{4}$	1 $\frac{15}{16}$	64	3 $\frac{7}{8}$
55 $\frac{1}{2}$		10	1 $\frac{15}{16}$	16	3 $\frac{7}{8}$
					▲
62	1	7 $\frac{1}{4}$	1 $\frac{7}{8}$	32	5 $\frac{1}{2}$
63	10	9	1 $\frac{7}{8}$		5 $\frac{1}{2}$
64	5	6	1 $\frac{7}{8}$	110	4
65		8	1 $\frac{7}{8}$	13	5
44	2	2 $\frac{1}{4}$	1 $\frac{7}{8}$	43	6
45	8	7	1 $\frac{7}{8}$	171	6

## BEVEL WHEELS.

No.	Diameter.		Pitch. Inches.	No. Cogs.	Length of Cogs.	
	Ft.	In.			Inches.	
180	1	4 $\frac{1}{2}$	1 $\frac{13}{16}$	28	5	{
179	4	1 $\frac{1}{2}$	1 $\frac{13}{16}$	84	5	}
199	4	9 $\frac{3}{4}$	1 $\frac{3}{4}$	102	5	{ mortice.
200	1	4 $\frac{3}{8}$	1 $\frac{3}{4}$	29	5	}
193	5		1 $\frac{3}{4}$	110	3 $\frac{3}{4}$	640 lbs.
194	1		1 $\frac{3}{4}$	22	3 $\frac{3}{4}$	
68	3	5 $\frac{3}{4}$	1 $\frac{3}{4}$	75	4 $\frac{3}{4}$	
69	1	6 $\frac{3}{4}$	1 $\frac{3}{4}$	33	4 $\frac{3}{4}$	
3-	7 $\frac{1}{4}$		1 $\frac{3}{4}$	66	5 $\frac{1}{2}$	
1-	7 $\frac{1}{2}$	"	"	33	5	)

## BEVEL WHEELS.

59

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
	3 -	1	$1\frac{3}{4}$	66	$5\frac{1}{2}$ } motion
	1 -	$6\frac{1}{2}$	"	38	$5\frac{1}{2}$
72	2		$1\frac{11}{16}$	44	3 }
73	1	$5\frac{3}{4}$	$1\frac{11}{16}$	33	3 }
76	3		$1\frac{5}{8}$	68	4 }
77	1	$5\frac{1}{2}$	$1\frac{5}{8}$	33	4 }

## BEVEL WHEELS.

No.	Diameter.	Pitch.	No. Cogs.	Length of Cogs.
	Ft. In.	Inches.		Inches.
78	1 $7\frac{1}{2}$	1 $\frac{5}{8}$	37	4
79	2 $10\frac{1}{4}$	1 $\frac{5}{8}$	66	$3\frac{3}{4}$
80	2 $4\frac{5}{8}$	1 $\frac{5}{8}$	55	$3\frac{3}{4}$
81	6 $3\frac{1}{2}$	1 $\frac{5}{8}$	144	3
82	$19\frac{3}{4}$	1 $\frac{5}{8}$	37	3
195	2 8	1 $\frac{5}{8}$	62	5
196	1 1	1 $\frac{5}{8}$	25	5
<del>197</del>	1 10	1 $\frac{5}{8}$	42	3
<del>198</del>	11	1 $\frac{5}{8}$	21	3
87	5	$1\frac{6}{16}$	125	$3\frac{1}{4}$
88	1	$1\frac{9}{16}$	21	$3\frac{1}{4}$
85	5	$1\frac{9}{16}$	120	$3\frac{1}{2}$
86	10	$1\frac{9}{16}$	20	$3\frac{1}{2}$
188	2 6	$1\frac{9}{16}$	60	$3\frac{1}{2}$
187	1 8	$1\frac{9}{16}$	40	$3\frac{1}{2}$

205  
206

## BEVEL WHEELS.

61

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.			Inches.
91		$9\frac{1}{2}$	$1\frac{1}{2}$	20	$2\frac{3}{4}$	
92	6		$1\frac{1}{2}$	150	$2\frac{3}{4}$	6 segmt.
93	3	$8\frac{1}{8}$	$1\frac{1}{2}$	92	$3\frac{1}{2}$	
94	1	$8\frac{5}{8}$	$1\frac{1}{2}$	43	$3\frac{1}{2}$	
95	8	$7\frac{1}{2}$	$1\frac{1}{2}$	216	$3\frac{3}{4}$	12 segmt.
96	1	3	$1\frac{1}{2}$	31	$3\frac{3}{4}$	
97	5		$1\frac{1}{2}$	128	$3\frac{3}{4}$	8 segmt.
98		$10\frac{1}{8}$	$1\frac{1}{2}$	21	$3\frac{3}{4}$	
154	2	1	$1\frac{1}{2}$	54	$3\frac{3}{8}$	
155	1	$\frac{1}{2}$	$1\frac{1}{2}$	27	$3\frac{3}{8}$	
160	2	6	$1\frac{1}{2}$	64	3	mortice.
161	1	$2\frac{1}{2}$	$1\frac{1}{2}$	31	3	
$10\frac{1}{2}$		$1\frac{1}{2}$	252	$3\frac{3}{4}$		$12\frac{3}{4}$
$1\frac{1}{2}$		$1\frac{1}{2}$	25	$3\frac{3}{4}$		

## BEVEL WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.			Inches.
99	2	6	1 $\frac{7}{16}$	64	4	{ mortice.
100	1	3	1 $\frac{7}{16}$	32	4	
105	3		1 $\frac{3}{8}$	81	3	{
106	1		1 $\frac{3}{8}$	27	3	
107	1	6	1 $\frac{3}{8}$	41	2 $\frac{3}{4}$	{
108		11	1 $\frac{3}{8}$	25	2 $\frac{3}{4}$	
109	1	3 $\frac{1}{4}$	1 $\frac{3}{8}$	35	2 $\frac{7}{8}$	{
110	1	$\frac{1}{8}$	1 $\frac{3}{8}$	28	2 $\frac{7}{8}$	
111	4		1 $\frac{3}{8}$	112	3 $\frac{3}{4}$	{
112	1		1 $\frac{3}{8}$	28	3 $\frac{3}{4}$	
113	2	8	1 $\frac{3}{8}$	72	3 $\frac{1}{4}$	{
114		8	1 $\frac{3}{8}$	18	3 $\frac{1}{4}$	

## BEVEL WHEELS.

63

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.			Inches.
115	1	6	1 $\frac{3}{8}$	40	3	}
116	1	3 $\frac{3}{4}$	1 $\frac{3}{8}$	35	3	}
156	2	6	1 $\frac{5}{16}$	72	3 $\frac{1}{4}$	}
157	1	3	1 $\frac{5}{16}$	36	3 $\frac{1}{4}$	}
117	2	$\frac{1}{4}$	1 $\frac{1}{4}$	60	2 $\frac{3}{4}$	}
118		$9\frac{5}{8}$	1 $\frac{1}{4}$	24	2 $\frac{3}{4}$	}

## BEVEL WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.			Inches.	
119	17	9	1 $\frac{1}{4}$	528	3	24 segmt.
120	1	2	1 $\frac{1}{4}$	34	3	
121	5	6	1 $\frac{1}{4}$	166	4 $\frac{7}{8}$	
122		6	1 $\frac{1}{4}$	15	4 $\frac{7}{8}$	
123 $\frac{1}{2}$	10	1	1 $\frac{1}{4}$	304	3	16 segmt.
124 $\frac{1}{2}$	1		1 $\frac{1}{4}$	30	3	
125 $\frac{1}{2}$	8	6	1 $\frac{1}{4}$	126	3	16 segmt.
126 $\frac{1}{2}$	1	3	1 $\frac{1}{4}$	38	3	
158	1	1	1 $\frac{1}{4}$	32	2 $\frac{1}{8}$	
159		6 $\frac{1}{2}$	1 $\frac{1}{4}$	16	2 $\frac{1}{8}$	
162	2	1 $\frac{1}{4}$	1 $\frac{1}{4}$	60	3 $\frac{1}{2}$	
163		5 $\frac{1}{2}$	1 $\frac{1}{4}$	13	3 $\frac{1}{2}$	

## BEVEL WHEELS.

65

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
165	12	2	$1\frac{3}{16}$	404	$2\frac{3}{4}$ } 16 segmt.
166	1	2	$1\frac{3}{16}$	37	$2\frac{3}{4}$ }
123	2	$7\frac{1}{2}$	$1\frac{1}{8}$	86	$2\frac{3}{8}$ }
124	1	7	$1\frac{1}{8}$	51	$2\frac{3}{8}$ }
125	2		$1\frac{1}{8}$	66	$3\frac{1}{4}$ }
126	1		$1\frac{1}{8}$	33	$3\frac{1}{4}$ }
167	2	$8\frac{1}{4}$	$1\frac{1}{8}$	88	3 }
168		$5\frac{7}{8}$	$1\frac{1}{8}$	16	3 }

## BEVEL WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
169	2	4 $\frac{1}{2}$	1 $\frac{1}{8}$	88	3 {
170		7	1 $\frac{1}{8}$	22	3 {
	1 -	2 $\frac{3}{4}$	1 $\frac{1}{8}$	41	2 $\frac{1}{8}$
		4 $\frac{1}{4}$	1 $\frac{1}{8}$	12	2 $\frac{1}{4}$
127	2	4 $\frac{1}{2}$	1 $\frac{1}{16}$	81	3 $\frac{1}{8}$ {
128		9 $\frac{1}{2}$	1 $\frac{1}{16}$	27	3 $\frac{1}{8}$ {
27	1	6 $\frac{1}{2}$	1 $\frac{1}{16}$	54	2 $\frac{3}{4}$ {
28		9 $\frac{1}{4}$	1 $\frac{1}{16}$	27	2 $\frac{3}{4}$ {
129	2	2 $\frac{1}{4}$	1	85	2 $\frac{1}{2}$ {
130		6 $\frac{1}{2}$	1	21	2 $\frac{1}{2}$ {

## BEVEL WHEELS.

67

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
137	1	5 $\frac{3}{4}$	$\frac{15}{16}$	60	$1\frac{1}{4}$
138		11 $\frac{5}{8}$	$\frac{15}{16}$	40	$1\frac{1}{4}$
					}
141	1	3 $\frac{1}{4}$	$\frac{7}{8}$	54	$2\frac{1}{2}$
142		7 $\frac{5}{8}$	$\frac{7}{8}$	27	$2\frac{1}{2}$
					}

## BEVEL WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
143	1	2 $\frac{3}{4}$	$\frac{3}{4}$	60	$1\frac{1}{8}$
144		4 $\frac{7}{8}$	$\frac{3}{4}$	20	$1\frac{1}{8}$
172		6 $\frac{7}{8}$	$\frac{3}{4}$	28	$2\frac{1}{4}$
171	1	8 $\frac{1}{2}$	$\frac{3}{4}$	84	$2\frac{1}{4}$

*Miter Gears*  
 3 -  $2\frac{5}{8}$ ,  $3\frac{7}{8}$ ,  $3\frac{3}{4}$     $9\frac{1}{2}$

## MITRE WHEELS.

69

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
3	3	10	2 $\frac{3}{4}$	52	8
19	1	6	2 $\frac{5}{8}$	35	7
40	3	1	2 $\frac{5}{8}$	44	8
1	1	8	2 $\frac{1}{2}$	25	5

## MITRE WHEELS.

No.	Diameter.		Pitch. Inches.	No. Cogs.	Length of Cogs. Inches.
	Ft.	In.			
2	1	6 $\frac{1}{2}$	2 $\frac{1}{4}$	25	5 $\frac{1}{2}$
28	1	10	2 $\frac{1}{8}$	32	6
33	1	10	2 $\frac{1}{8}$	32	6 mortice.
4	2	11 $\frac{3}{8}$	2	53	4 $\frac{3}{4}$

## MITRE WHEELS.

71

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.			Inches.	
6	3	7 $\frac{3}{4}$	2	69	4 $\frac{3}{4}$	
7	2	1 $\frac{1}{4}$	2	40	4	
8	3		2	55	6	mortice.
9	3		2	56	6	
5	1	$\frac{1}{2}$	2	19	5	
41	2	6	2	47	5 $\frac{1}{2}$	
42	2	6 $\frac{5}{8}$	2	48	5 $\frac{1}{2}$	mortice.
10	2	$\frac{5}{8}$	$1\frac{15}{16}$	40	$4\frac{1}{8}$	
11	2	$\frac{5}{8}$	$1\frac{15}{16}$	40	$4\frac{1}{8}$	mortice.

## MITRE WHEELS.

No.	Diameter.		Pitch. Inches.	No. Cogs.	Length of Cogs. Inches.
	Ft.	In.			
12	1	3 $\frac{1}{4}$	1 $\frac{3}{4}$	27	4
13	3	4	1 $\frac{3}{4}$	71	4 $\frac{1}{2}$
14	1	$\frac{1}{2}$	1 $\frac{1}{2}$	26	2 $\frac{7}{8}$
15	2	5 $\frac{1}{2}$	1 $\frac{1}{2}$	63	2 $\frac{3}{16}$
18	2		1 $\frac{1}{2}$	49	3 $\frac{1}{2}$
16	1	$\frac{1}{4}$	1 $\frac{7}{16}$	27	3 $\frac{5}{8}$
17	1	4 $\frac{3}{4}$	1 $\frac{7}{16}$	37	3

## MITRE WHEELS.

73

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
23	1	9	1 $\frac{5}{8}$	39	4
24	1	8 $\frac{1}{2}$	1 $\frac{5}{8}$	40	4 mortice.
	$1 - 9 \frac{1}{4}$	$1 \frac{7}{8}$	$1 \frac{7}{8}$	41	4
20	1		1 $\frac{3}{8}$	28	3
43	1	4	1 $\frac{1}{4}$	40	3
21	1	8	1 $\frac{1}{4}$	50	$3 \frac{1}{8}$
22	1	$\frac{5}{8}$	1 $\frac{1}{4}$	31	$1 \frac{3}{4}$

## MITRE WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs. Inches.
	Ft.	In.	Inches.		
25	1	3	1 $\frac{1}{8}$	42	2 $\frac{1}{4}$
26	1	2	1 $\frac{1}{8}$	39	2 $\frac{1}{4}$
27	1	6	1 $\frac{1}{8}$	50	3 $\frac{1}{4}$
29	1	7	1	59	2 $\frac{7}{8}$
36	1	5 $\frac{3}{4}$	1 $\frac{5}{16}$	58	2 $\frac{1}{8}$

## MITRE WHEELS.

75

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
38	10		$\frac{7}{8}$	34	$2\frac{3}{4}$
39	6		$\frac{7}{8}$	22	$1\frac{1}{4}$
30	9		$\frac{3}{4}$	38	$1\frac{5}{8}$
31	$8\frac{5}{8}$		$\frac{3}{4}$	36	$1\frac{3}{16}$
44	$9\frac{5}{8}$		$\frac{3}{4}$	40	$1\frac{3}{4}$
32	1		$\frac{1}{2}$	78	$1\frac{1}{4}$
34		$5\frac{3}{8}$	$\frac{3}{8}$	45	$\frac{5}{8}$
35		$3\frac{7}{8}$	$\frac{3}{8}$	30	$\frac{5}{8}$

## RACKS AND PINIONS.

No.	Diameter.	Pitch.	No. Cogs.	Length of Cogs.
	Ft. In.	Inches.		Inches.
1	Rack.	2 $\frac{1}{8}$	14	2 $\frac{1}{2}$
2	11 $\frac{1}{8}$	2 $\frac{1}{8}$	16	3
30	Rack.	1 $\frac{3}{4}$	22	3 $\frac{5}{8}$
210	1 1 $\frac{5}{8}$	1 $\frac{3}{4}$	24	3 $\frac{5}{8}$
3	Rack.	1 $\frac{1}{8}$	31	3
4	4 $\frac{7}{8}$	1 $\frac{1}{8}$	13	3

## RACKS AND PINIONS.

77

No.	Diameter.	Pitch.	No. Cogs.	Length of Cogs.
	Ft. In.	Inches.		Inches.
5	Rack.	1 $\frac{1}{8}$	72	2 $\frac{1}{4}$
6	6 $\frac{3}{4}$	1 $\frac{1}{8}$	18	2 $\frac{3}{8}$
7	3 $\frac{3}{8}$	1 $\frac{1}{8}$	9	2 $\frac{3}{8}$
8	Rack.	1 $\frac{1}{8}$	18	4
4	4 $\frac{7}{8}$	1 $\frac{1}{8}$	13	3
33	Rack.	1 $\frac{1}{8}$	22	2 $\frac{1}{2}$
34	Rack.	1 $\frac{1}{8}$	16	3
35	4 $\frac{3}{8}$	1 $\frac{1}{8}$	12	2 $\frac{7}{8}$
36	4 $\frac{1}{2}$	1 $\frac{1}{8}$	12	2 $\frac{3}{4}$
37	3 $\frac{3}{4}$	1 $\frac{1}{8}$	10	3 $\frac{1}{8}$
38	3 $\frac{1}{2}$	1 $\frac{1}{8}$	10	2 $\frac{7}{8}$
9	Rack.	1	20	1 $\frac{5}{8}$
10	3 $\frac{3}{8}$	1	10	1 $\frac{5}{8}$
41	Rack.	1	65	1 $\frac{1}{2}$
42	3 $\frac{7}{8}$	1	12	1 $\frac{1}{2}$
43	3	1	10	1 $\frac{5}{8}$
44	2 $\frac{7}{8}$	1	9	2

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.			
15	Rack.		$\frac{3}{4}$	33	$1\frac{1}{2}$
16		$2\frac{3}{8}$	$\frac{3}{4}$	10	$1\frac{3}{8}$
11	Rack.		$\frac{11}{16}$	53	$2\frac{1}{4}$
12	Rack.		$\frac{11}{16}$	53	$1\frac{3}{4}$
13		$4\frac{5}{8}$	$\frac{11}{16}$	21	$1\frac{3}{4}$
14		$2\frac{5}{8}$	$\frac{11}{16}$	12	$1\frac{3}{4}$
17	Rack.		$\frac{11}{16}$	53	$1\frac{1}{8}$
18		$2\frac{5}{8}$	$\frac{11}{16}$	12	$1\frac{1}{4}$
21	Rack.		$\frac{5}{8}$	40	$1\frac{1}{8}$
22		$3\frac{1}{8}$	$\frac{5}{8}$	16	1

## RACKS AND PINIONS.

79

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs. Inches.
	Ft.	In.	Inches.		
25	Rack.		$\frac{9}{16}$	140	2
26		3	$\frac{9}{16}$	18	$2\frac{1}{4}$
27	Rack.		$\frac{9}{16}$	68	$1\frac{1}{2}$
28		$4\frac{1}{4}$	$\frac{9}{16}$	23	$1\frac{1}{2}$
47	Rack.		$\frac{5}{16}$	157	2
48		$3\frac{7}{8}$	$\frac{5}{16}$	38	2
45	Rack.		$\frac{3}{8}$	138	$1\frac{1}{4}$
46		$1\frac{1}{2}$	$\frac{3}{8}$	12	$1\frac{1}{2}$

## PULLEYS.

No.	Diameter.		Face.		Lbs.
	Ft.	In.	Ft.	In.	
1	12		2	1	9000
2	12		1	9	6160
3	12		2	1	6840
4	10		1	8	4200
5	10		2	X	4700
6	10		1	4	3750
7	9		1	8	3250
8	9		1	5	3000
9	8		1	6	2510
10	8		1	2	2100
11	7		1	2	2475
12	7		1	2	1550
13	6			11	1045
14	5		1		840
15	5		1	8	1730
16	4			9	400
17	4	1 $\frac{1}{8}$		3 $\frac{5}{8}$	
18	3			8	225
19	3			6	120
20	3		-1	0	210
21	3			6	
22	3		1	2	300
23	3			9 $\frac{1}{2}$	
24	2	6		9 $\frac{1}{2}$	
25	2	6		6	
26	2	4 $\frac{1}{8}$		5	

68 1-6 1810

## PULLEYS.

81

No.	Diameter.		Face.		Lbs.
	Ft.	In.	Ft.	In.	
27	2	4		6	
28	2	2		6	
29	2	$\frac{1}{4}$		$4\frac{1}{2}$	
30	2			$10\frac{1}{2}$	
31	2			6	
32	2			3	
33	2			8	
34	1	10		6	
35	1	9		9	
36	1	$9\frac{1}{2}$		$4\frac{1}{2}$	
37	1	$8\frac{3}{4}$		$2\frac{1}{2}$	
38	1	8		$\frac{7}{8}$	Half pulley. 
39	1	$7\frac{1}{4}$		6	
40	1	8		6	
41	1	8		$4\frac{1}{2}$	
42	1	$6\frac{1}{8}$	1	$1\frac{1}{4}$	
43	1	6		8	
44	1	$5\frac{1}{4}$		6	
45	1	$4\frac{1}{4}$		6	
46	1	4		$7\frac{1}{2}$	
47	1	4		2	
48	1	6		6	
49	1	6		$4\frac{1}{2}$	
50	1	6		$3\frac{1}{2}$	
51	1	4		$4\frac{1}{4}$	
52	1	4		$3\frac{1}{2}$	

## PULLEYS.

No.	Diameter.		Face.		Lbs.
	Ft.	In.	Ft.	In.	
53	1	4		9	
54	1	3		2 $\frac{5}{8}$	
55	1	2 $\frac{7}{8}$		2 $\frac{3}{8}$	
56	1	2		10	
57	1	2		6	
58	1	2		4 $\frac{1}{2}$	
59	1	1 $\frac{5}{8}$		3 $\frac{3}{8}$	
60	1	1 $\frac{1}{8}$		6	
61	1	$\frac{1}{4}$		5	
62	1			4 $\frac{3}{4}$	
63	1			2 $\frac{3}{8}$	
64	1			1 $\frac{5}{8}$	
65	1		1		
66		11 $\frac{3}{4}$		2 $\frac{3}{8}$	
67		11 $\frac{1}{8}$		6	
68		11		8 $\frac{1}{8}$	
69		11		3 $\frac{3}{8}$	
70		10		4	
71		10		2 $\frac{5}{8}$	
72		10		6	
73		10		4 $\frac{1}{2}$	
74		9 $\frac{3}{8}$		6	
75		9		8 $\frac{1}{8}$	
76		9		2 $\frac{1}{2}$	
77		8 $\frac{1}{4}$		3	
78		7		7	

## PULLEYS.

83

No.	Diameter.		Face.		Lbs.
	Ft.	In.	Ft.	In.	
79		7		6	
80		8		10	
81		8		6	
82		6 $\frac{3}{8}$		1 $\frac{5}{8}$	
83		6		2 $\frac{1}{2}$	
84		5 $\frac{1}{2}$		2 $\frac{1}{2}$	
85		6		6	
86		5		6	
87		5		5	
88		6		4 $\frac{1}{2}$	
	2	—		5 $\frac{1}{2}$	
	2	—		6	
	1	—		5	

## 84 FLY WHEELS — SQUARE RIMS.

No.	Diameter.		Face.	Depth.	Lbs.	
	Ft.	In.	Inches.	Inches.		
36	5	8			1200	Cast iron arms.
8	4	6	2 $\frac{1}{4}$	3 $\frac{7}{8}$		
9	4		2	3		
10	3	10 $\frac{3}{4}$	2 $\frac{1}{2}$	3 $\frac{1}{2}$		
11	3	6	2 $\frac{1}{4}$	2 $\frac{1}{2}$		
12	3	6	1 $\frac{5}{8}$	2 $\frac{1}{2}$		
35	3	4			300	Wro't. iron arms.
13	3	3 $\frac{3}{4}$	3	2 $\frac{1}{4}$		
14	3	$\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{7}{8}$		
15	2	7 $\frac{3}{4}$	2	3 $\frac{3}{4}$		
16	2	7 $\frac{3}{8}$	2 $\frac{1}{2}$	1 $\frac{3}{8}$		
17	2	6	2 $\frac{3}{4}$	1 $\frac{1}{4}$		
18	1	5 $\frac{1}{2}$	$\frac{3}{4}$	1 $\frac{1}{8}$		
19	1	5 $\frac{7}{8}$	$\frac{1}{2}$	1		
20	1	2 $\frac{5}{8}$	1	1 $\frac{1}{2}$		
21	1		$\frac{3}{4}$	$\frac{3}{4}$		
22	1	$\frac{1}{4}$	1 $\frac{3}{8}$	Round.		
23	8	1	4 $\frac{1}{2}$	6	2800	Wrought arms.

## FLY WHEELS — OVAL RIMS. 85

No.	Diameter.		Lbs.	
	Ft.	In.		
23	10		2000	Wro't. iron arms.
24	9		2450	Wro't. iron arms.
25	8		1700	
26	7	2	1000	
27	6	10	800	
4	5			
28	5	9	600	
29	5	1	400	
2	4	11 $\frac{3}{4}$		
3	4	11 $\frac{3}{4}$	296	
30	4	7	260	Cast iron arms.
5	4	$\frac{1}{2}$	209	
7	4	$\frac{1}{2}$		
6	4		277	
31	3		130	<i>Wro't arms</i>
34	2	6	63	Cast iron arms.
32	2	4	128	
33	2			
	7	6	1400	Wro't. iron arms.
			68	

## 86 BAND WHEELS FOR LATHES.

No.	Diameter.		Face. Inches.	Description
	Ft.	In.		
1	2	8	2 $\frac{7}{8}$	6 straight arms.
2	2	3 $\frac{3}{4}$	3 $\frac{1}{4}$	6 crooked arms.
3	2	2	2 $\frac{7}{8}$	4 branched arms.
4	2	2	2 $\frac{3}{8}$	4 straight arms.
5	2	1 $\frac{3}{4}$	1 $\frac{3}{4}$	4 branched arms.
6	1	11 $\frac{1}{2}$	1 $\frac{1}{8}$	4 straight arms.
7	1	10 $\frac{1}{2}$	2 $\frac{3}{4}$	4 branched arms.
8	2	$\frac{1}{2}$		cone wheel.

No.	Diam.	Thickness.		No.	Diam.	Thickness.
	Inches.	Inches.			Inches.	Inches.
1	20	2 $\frac{3}{4}$	Arms.	27	7 $\frac{1}{2}$	1 $\frac{1}{4}$
2	24	3		28	7 $\frac{1}{2}$	1
3	15	2	Arms.	29	7	2
4	12	2 $\frac{1}{4}$		30	7	1 $\frac{3}{4}$
5	12	1 $\frac{3}{4}$		31	7	1 $\frac{1}{2}$
6	11	2 $\frac{1}{2}$		32	7	1 $\frac{1}{4}$
7	11	2 $\frac{1}{4}$		33	7	1
8	10 $\frac{1}{2}$	2 $\frac{1}{8}$		34	6 $\frac{3}{4}$	1 $\frac{1}{2}$
9	10 $\frac{1}{2}$	1 $\frac{3}{4}$		35	6 $\frac{1}{2}$	1 $\frac{1}{2}$
10	10	2		36	6 $\frac{1}{2}$	1 $\frac{1}{4}$
11	10	1 $\frac{1}{2}$		37	6 $\frac{1}{2}$	1
12	10	1		38	6 $\frac{1}{2}$	2 $\frac{1}{8}$
13	9	2		39	6 $\frac{1}{2}$	1 $\frac{7}{8}$
14	9	1 $\frac{3}{4}$		40	6 $\frac{1}{4}$	1 $\frac{3}{4}$
15	9	1 $\frac{1}{2}$		41	6 $\frac{1}{4}$	1 $\frac{1}{2}$
16	9	1 $\frac{1}{4}$		42	6 $\frac{1}{4}$	1 $\frac{1}{4}$
17	9	1		43	6	2 $\frac{1}{8}$
18	8 $\frac{3}{4}$	1 $\frac{3}{4}$		44	6	1 $\frac{3}{4}$
19	8	3		45	6	1 $\frac{1}{2}$
20	8	2		46	6	1 $\frac{1}{4}$
21	8	1 $\frac{3}{4}$		47	6	1
22	8	1 $\frac{1}{4}$		48	5 $\frac{3}{4}$	1 $\frac{1}{4}$
23	8	1		49		
24				50	5 $\frac{1}{2}$	1 $\frac{1}{2}$
25	7 $\frac{1}{2}$	2 $\frac{1}{4}$		51	5 $\frac{1}{2}$	1 $\frac{1}{4}$
26	7 $\frac{1}{2}$	1 $\frac{3}{4}$		52	5 $\frac{1}{2}$	1

## SHIVES.

No.	Diam.	Thickness.		No.	Diam.	Thickness.
	Inches.	Inches.			Inches.	Inches.
53	5	1 $\frac{1}{2}$		79	3 $\frac{1}{2}$	$\frac{7}{8}$
54	5	1 $\frac{1}{4}$		80	3 $\frac{1}{2}$	$\frac{3}{4}$
55	5	1 $\frac{1}{8}$		81	3 $\frac{1}{4}$	1
56	5	1		82	3 $\frac{1}{4}$	$\frac{7}{8}$
57	4 $\frac{3}{4}$	1 $\frac{1}{2}$		83	3	1 $\frac{1}{4}$
58	4 $\frac{3}{4}$	1 $\frac{1}{4}$		84	3	1
59	4 $\frac{3}{4}$	1 $\frac{1}{8}$		85	3	$\frac{7}{8}$
60	4 $\frac{1}{2}$	2		86	2 $\frac{3}{4}$	
61	4 $\frac{1}{2}$	1 $\frac{3}{4}$		87	2 $\frac{3}{4}$	
62	4 $\frac{1}{2}$	1 $\frac{1}{2}$		88	2 $\frac{1}{2}$	
63	4 $\frac{1}{2}$	1 $\frac{1}{4}$				
64	4 $\frac{1}{2}$	1 $\frac{1}{8}$				
65	4 $\frac{1}{2}$	1				
66	4 $\frac{1}{4}$	1 $\frac{1}{2}$				
67	4 $\frac{1}{4}$	1 $\frac{1}{4}$				
68	4 $\frac{1}{4}$	1				
69	4	1 $\frac{1}{2}$				
70	4	1 $\frac{1}{4}$				
71	4	1				
72	3 $\frac{3}{4}$	1 $\frac{1}{4}$				
73	3 $\frac{3}{4}$	1				
74	3 $\frac{3}{4}$	$\frac{7}{8}$				
75	3 $\frac{3}{4}$	$\frac{3}{4}$				
76	3 $\frac{1}{2}$	1 $\frac{1}{2}$				
77	3 $\frac{1}{2}$	1 $\frac{1}{4}$				
78	3 $\frac{1}{2}$	1				











